Potential Impacts of the

2008 8-Hour Ozone National Ambient Air Quality Standard Revision

For Louisiana

Designations and Classifications

Louisiana Department of Environmental Quality

Office of Environmental Assessment

Air Quality Assessment Division

Contact: Jennifer Mouton, Administrator

225-219-3488

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The Clean Air Act, codified as 42 U.S.C. 7401 *et seq*., requires the Environmental Protection Agency to establish minimum national standards for air quality, and assigns primary responsibility to the states to assure compliance with the standards. Any area not meeting the standards is referred to as a nonattainment area (NAA), and is required to implement specified air pollution control measures.

Like many other programs administered by the Environmental Protection Agency, federal efforts to control air pollution have gone through several phases. Federal legislation addressing air pollution was first passed in 1955, prior to which, air pollution was the exclusive responsibility of state and local levels of government. The federal role was strengthened in subsequent amendments such as the Clean Air Act Amendments of 1970, 1977, and 1990.

Originally, the Act required that the National Ambient Air Quality Standards (NAAQS) be attained by 1977 at the latest, but the states experienced widespread difficulty in complying with these deadlines. As a result, the deadlines have been extended several times. Under the 1990 amendments, areas not in attainment with NAAQS must meet special compliance schedules, staggered according to the severity of an area's air pollution problem. The amendments also established specific requirements for each nonattainment category as described below.

Nonattainment Requirements

The 1990 Clean Air Act Amendments group nonattainment areas into classifications based on the extent to which the NAAQS are exceeded, and establish specific pollution controls and attainment dates for each classification.

Nonattainment areas are classified on the basis of a "design value," which is derived from the pollutant concentration (in parts per million) recorded by air quality monitoring devices. The design value for the 8-hour ozone standard is the average of the fourth highest readings measured over the latest 3-year period. The Act creates five classes of ozone nonattainment. Listed below are the five nonattainment classes along with the specific requirements for each:

Marginal:

1. An inventory of actual emissions from all sources must be conducted.
2. Major source definition is at 100 tons per year of volatile organic compounds (VOC).
3. Permit program changes must be implemented to require new or modified sources to be permitted under New Source Review (NSR) requirements. Previously, these would have been permitted under the more lenient Prevention of Significant Deterioration (PSD) requirements.
4. Offsets of 1.1 to 1. This means that any new or modified operation will have to reduce emissions by this ratio (modifications are defined as any change at a major stationary air emission source that results in an increase any of emissions from any discrete operation, unit or other pollutant emitting activity at the source).

5. Transportation conformity will be required in areas designated by EPA as nonattainment areas. Transportation conformity is a way to:
    a. Ensure that planning for transportation systems is consistent with and conforms to State air quality plans for attaining and maintaining the health-based National Ambient Air Quality Standards (NAAQS), and
    b. Ensure that neither the transportation system as a whole nor individual transportation projects cause new air quality violations or worsen existing violations.

    The transportation conformity process integrates transportation and air quality planning by requiring that transportation plans, programs, and projects verify that the expected emissions resulting from their implementation are consistent with and conform to the purpose of the SIP.
6. General Conformity is required for all federal actions other than projects funded by Federal Highway Administration (FHWA) and Federal Transportation Administration (FTA) to ensure that they do not interfere with the State's attainment demonstration.
7. Based upon previous EPA actions, we expect that parishes that do not currently have monitoring will have to add ozone, NOx, VOC, and meteorological monitoring along with AQI and forecasting. For Louisiana, these eight parishes include Desoto, St. Martin, Cameron, Terrebonne, East Feliciana, West Feliciana, St. Helena, and Plaquemine. In addition, there are eleven additional affected parishes outside of the Baton Rouge five-parish area that will have to add NOx, VOC, and meteorological monitoring along with AQI and forecasting. These parishes include Bossier, Caddo, Lafayette, Lafourche, Point Coupee, St. James, Orleans, St. Bernard, St. Charles, St. John, and St. Tammany. Expansion of the monitoring network may be directed by EPA in future rulemaking, although there are several reasons for the state to take the steps to perform this: 1) the data gathered would be useful in modeling efforts to develop reduction strategies; 2) data gathered within the nonattainment area would be needed to keep the area citizens informed; and 3) data gathered would actually be used to demonstrate attainment.

Moderate:

1. All of the "marginal" requirements, and:
2. DEQ must submit a plan to EPA that specifies annual reductions of VOC/NOx to attain the ozone standard by the attainment date. It must provide for at least a 15% VOC /NOx reduction from the total amount of actual VOC/NOx emissions from all anthropogenic sources in the area. The baseline emissions will probably be calculated in the calendar year that the area was designated nonattainment.
3. Reasonably Achievable Control Technology (RACT) of 60-80% control efficiency equipment must be installed on all sources.
4. Gasoline sold within the nonattainment areas will be required to have a REID vapor pressure (RVP) of 9.0 psi or lower during ozone season.

5. Stage 2 vapor recovery at fueling stations will be required until On-Board Refueling Vapor Recovery (ORVR) is achieved (85% or higher of ORVR equipped vehicles in that area)
6. A Vehicle Inspection and Maintenance (I/M) program similar to the one in Baton Rouge area entailing On-board Diagnostics (OBD) and gas cap checks will be required.
7. Offsets of 1.15 to 1. This means that any new or modified operation will have to reduce emission by this ratio (modifications are defined as any change at a major stationary air emission source that results in an increase any of emissions from any discrete operation, unit or other pollutant emitting activity at the source).

Serious:

1. All of the "moderate" requirements, and:
2. Enhanced ambient air monitoring. Section 182(c)(1) of the 1990 Clean Air Act Amendments (CAAA) required EPA to promulgate rules for the enhanced monitoring of ozone, oxides of nitrogen (NOx), and volatile organic compounds (VOC). Responding to this requirement, EPA promulgated regulations to initiate the Photochemical Assessment Monitoring Stations (PAMS) program. The PAMS program requires the establishment of an enhanced monitoring network in all ozone nonattainment areas classified as serious, severe, or extreme. Each PAMS network consists of as many as five monitoring stations, depending on the area's population. The Baton Rouge area currently has three PAMs stations. These stations are carefully located according to meteorology, topography, and relative proximity to emissions sources of VOC and NOx. The data collected at the PAMS sites include measurements of ozone, NOx, a target list of VOCs (including several carbonyls), plus surface and upper air meteorology. Most PAMS sites measure 56 target hydrocarbons on an hourly or 3-hour basis during the PAMS monitoring season.
3. Major source definition will be changed to 50 tpy VOC. For serious ozone nonattainment areas, the definition of major source applies to any stationary source or group of sources in a contiguous area and under common control that emits, or has the potential to emit, at least 50 tons per year of VOC/NOx. For marginal and moderate nonattainment areas the 50 tons of VOC/NOx become 100 tons per year.
4. Reasonable Further Progress (RFP) requires a serious nonattainment area to demonstrate that the plan will result in a VOC/NOx emissions reduction of at least three percent per year beyond the 15% reductions required for a moderate area.
5. DEQ must submit to EPA a modeled attainment demonstration that indicates attainment of the standard with the appropriate control measures in effect.
6. The state must implement Transportation Control Measures (TCM) such as: HOV (high occupancy vehicle) lanes, bicycle lanes, traffic flow improvements (light synchronization), special parking places for HOVs, and employer sponsored flex hour programs.
7. Offsets: 1.2 to 1. Any new or modified operation will have to reduce emission by this ratio (modifications are defined as any change at a major stationary source that results is in an increase any of emissions from any discrete operation, unit or other pollutant emitting activity at the source)

Severe:

1. All of "serious" requirements, and:
2. Major source definition would go down to 25 tpy for NOx and/or VOC
3. Offsets: 1.3 to 1 or 1.2 to 1 with Best Available Control Technology (BACT). The ratio will be 1.3 to 1 or if the existing major sources use best available technologies then they can use 1.2 to 1.
4. Section 185 fees would be imposed

Extreme:

1. All of "severe" requirements, and:
2. Major source definition goes down to 10 tpy for NOx and/or VOC
3. Offsets: 1.5 to 1 or 1.2 to 1 with BACT. The ratio will be 1.3 to 1 or if the existing major sources use best available technologies then they can use 1.5 to 1.

Ozone Standard Revisions

First classified as having a "serious" ozone problem for the 1-hour standard, the Baton Rouge ozone NAA was bumped up to a "severe" classification by operation of law when it failed to achieve attainment by the 1999 date specified in the CAA. The area achieved attainment for the 1-hour ozone standard severe classification in 2006. The 1-hour ozone standard was revoked by the EPA effective June 15, 2005.

On April 30, 2004, EPA finalized a revision to the NAAQS for ozone which changed the standard from 0.12 parts per million (ppm) averaged over one hour, to 0.08 ppm, averaged over eight hours. Under the 8-hour ozone standard the Baton Rouge area was designated as a marginal nonattainment area. However, Baton Rouge missed its marginal attainment deadline of June 15, 2006, and on October 30, 2007, the EPA reclassified Baton Rouge to "moderate" with a new attainment date of June 15, 2010.

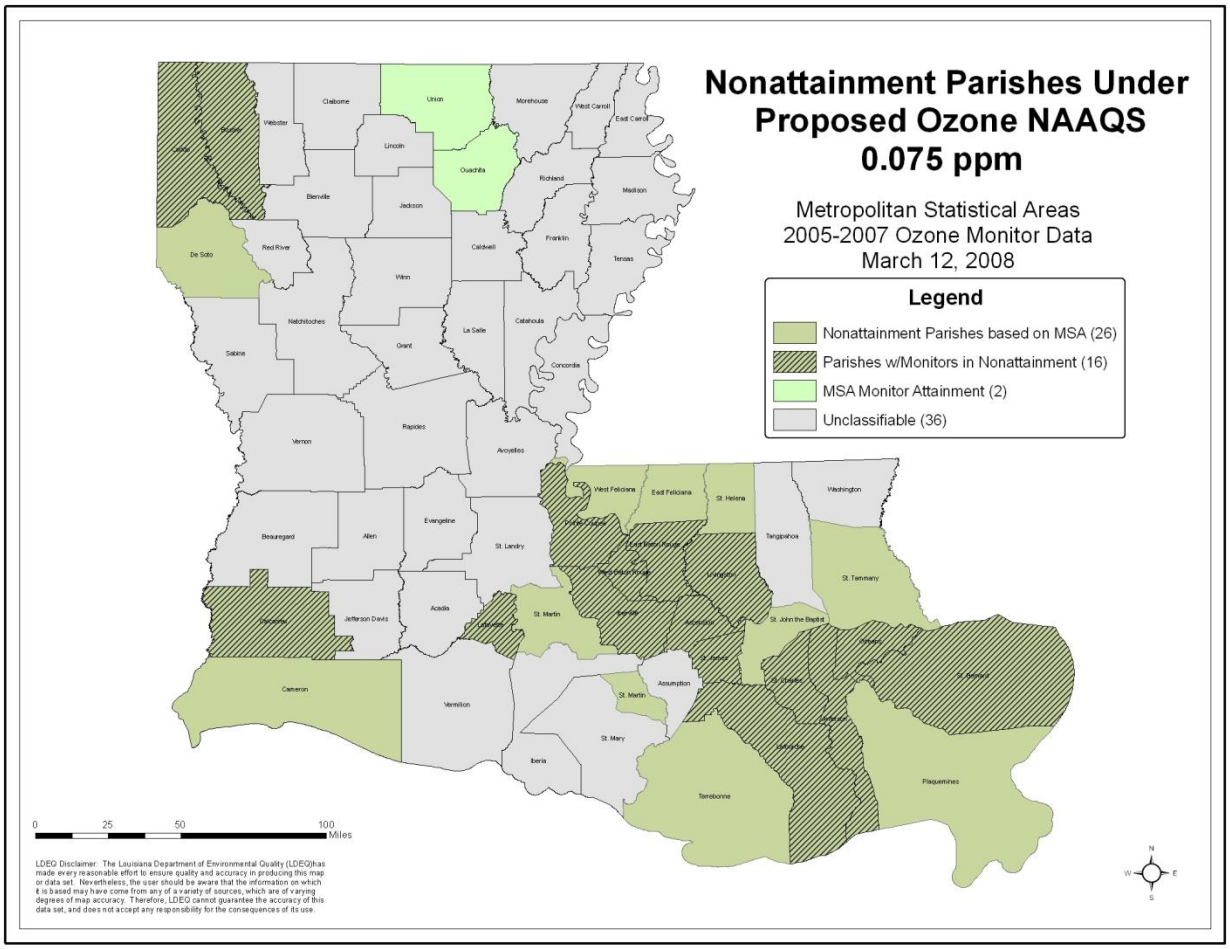
On March 12, 2008, EPA proposed yet another revision to the NAAQS for ground-level ozone. EPA proposed to revise the 8-hour "primary" ozone standard, designed to protect public health, to a level of 0.075 parts per million (ppm). EPA is also proposed setting the secondary 8-hour ozone standard to the level of 0.075 ppm making it identical to the revised primary standard. LDEQ has projected which areas of the state will likely become nonattainment. (See map below).

The implementation schedule for the standard change is as follows:

Final Date of the Rule	60 days after publication in the Federal Register
State Designation Recommendations sent to EPA	No Later than March 12, 2009
Final Designations made by EPA	No Later than March 12, 2010

Attainment Demonstration SIPs Due	2013
Attainment Dates	2013 – 2030 (depends on severity of problem)

Although the standard has been proposed and recommendations for designations are due by March 12, 2009, the EPA has not yet finalized the classification categories for the new standard. Designation recommendations will be made under the new standard based on actual recorded emissions for the three-year period 2006-2008. For now, the 1997 8-hour ozone NAAQS and all the associated regulatory requirements will remain in place. States should continue their plans for implementing the 1997 NAAQS and EPA will address any transition issues in a separate rulemaking.



Air Quality Index

In addition to the potential increase in the number of nonattainment areas, the air quality index will also see some changes. The purpose of the Air Quality Index or AQI is to help the public understand what local air quality means to their health. It is the means for communicating air quality information to interested persons. The AQI is divided into six categories. Each category corresponds to a different level of health concern. The six levels of health concern and what they mean are provided in the chart below. EPA has assigned a specific color to each AQI category to make it easier for people to understand quickly whether air pollution is reaching unhealthy levels in their communities. For example, the color orange means that conditions are "unhealthy for sensitive groups," while red means that conditions may be "unhealthy for everyone," and so on.

We can expect some significant changes in how the AQI will affect the reported air quality in Louisiana. As an example, if we apply the new AQI reporting to 2007 monitoring data, the number of days reported as "unhealthy for sensitive groups" (Orange AQI) in the Baton Rouge area for 2007 would have increased from 19 days to 28 days. Likewise the number of "unhealthy" days (Red AQI) would have increased from 1 to 5 days. In both of these examples it is important to remember that there was no change in air quality, just a change in the reporting guidelines.

We also expect the other areas of the state will be affected similarly. New nonattainment areas will likely fall in the marginal or moderate nonattainment classification. Again using the 2007 data as an example and with no change in air quality, these other areas of the state would have seen an increase in the reported number of Orange AQI days from 10 to 37 and the number of Red AQI days from 1 to 3.

Table of EPA's new breakpoints for AQI reporting based on 2008 revision to the ozone standard:

Category	AQI Value	1997 8-hour concentration (ppm)	2008 8-hour concentration (ppm)
Good	0-50	0.000 - 0.064	0.000 – 0.059
Moderate	51-100	0.065 - 0.084	0.060 – 0.075
Unhealthy for Sensitive Groups	101-150	0.085 - 0.104	0.076 – 0.095
Unhealthy	151-200	0.105 - 0.124	0.096 – 0.115
Very Unhealthy	201-300	0.125 – 0.374	0.116 – 0.374
Hazardous	> 300	> 0.374	> 0.374

- **"Good"** The AQI value for your community is between 0 and 50. Air quality is considered satisfactory, and air pollution poses little or no risk.

- **"Moderate"** The AQI for your community is between 51 and 100. Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people. For example, people who are unusually sensitive to ozone may experience respiratory symptoms.

- **"Unhealthy for Sensitive Groups"** When AQI values are between 101 and 150, members of sensitive groups may experience health effects. This means they are likely to be affected at lower levels than the general public. For example, people with lung disease are at greater risk from exposure to ozone, while people with either lung disease or heart disease are at greater risk from exposure to particle pollution. The general public is not likely to be affected when the AQI is in this range.

- **"Unhealthy"** Everyone may begin to experience health effects when AQI values are between 151 and 200. Members of sensitive groups may experience more serious health effects.

- **"Very Unhealthy"** AQI values between 201 and 300 trigger a health alert, meaning everyone may experience more serious health effects.

- **"Hazardous"** AQI values over 300 trigger health warnings of emergency conditions. The entire population is more likely to be affected.

Coordination and Information Sharing

Throughout the process of implementing the changes outlined in this paper, LDEQ will work cooperatively with all the stakeholders. We envision planned visits with local governmental officials and citizens to provide them with the information needed to effectively plan for rule implementation. While EPA has not provided us with all of the necessary guidance, once this is received, we will distribute it to the stakeholders. We also will be meeting with local meteorologists to explain the effects of the changes to the AQI that will be implemented during this ozone season.